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THE ORNITHOLOGIST IN HELIGOLAND.

Some fifty years ago a young German artist, wishing to take up marine painting as a profession, fixed upon Heligoland as the most fitting place for a studio, and liked it so well that he has remained there ever since. He was induced to select that island for his *pied à terre*, not only on account of its position in mid-ocean, which would afford ever-changing views of sea and sky, but because it offered at the same time unusual facilities for observing a great variety of birds which temporarily rest there in the course of their migrations.

The observations, which he at first made for amusement, became so fascinating, that they developed into a course of serious study. Careful notes were taken of the different species of birds which alighted on the island, the dates of their arrival, the direction of the wind, and the condition of the weather at the time, with other particulars of great interest to naturalists, such as the separation of old and young birds on migration, the direction of their flight, and the altitude and speed with which they travel. The patient collection of such statistics for a period of nearly fifty years at length placed Herr Gätke in possession of such a mass of accumulated facts that it seemed imperative on him to publish at least the general results, if not the complete details, of such extended observations. Scientific ornithologists in all parts of the world gradually became aware of the nature of his studies, and pressed him for information. Some of them even visited him in his island home, and under his guidance became eye-witnesses of bird-migration on a scale which, judging only

from reports, had previously appeared to them exaggerated and well-nigh incredible. So far from this being the case, they were enabled to confirm by personal observation what they had formerly accepted only upon trust. Amongst others who thus journeyed to Heligoland to satisfy their curiosity was Mr. Henry Seebohm, who in his most interesting work, 'Siberia in Europe,' published in 1880, has given a graphic account of his visit to Herr Gätke, and of all he saw during his sojourn on the island. At page 249 of the volume just quoted he writes:—

"The *modus operandi* of migration has been to a large extent misunderstood. Few birds migrate by day. By far the greater number of species migrate by night. The number of places where nocturnal migrations can be systematically observed is very small. Two circumstances are requisite to make such observations successful. First, a sufficiently large population sufficiently interested in the event to permit no nocturnal migration to pass unobserved. Secondly, a sufficiently intelligent naturalist to record the sum of many years' observation. Probably in no place in the world are these desiderata so exactly fulfilled as upon the island of Heligoland."

Heligoland is a very small place, probably not much more than a hundred acres in extent. It is an isolated triangular rock of red-sandstone, with perpendicular cliffs two or three hundred feet in height, dropping into a sea so shallow that at low-water one may scramble round the island at the foot of the cliffs. Most of the surface of this rock is covered with rich soil and grass.

About a mile from the island is a sandbank, the highest portion covered over with esparto-grass, and the lower portions covered by the sea at high tide, reducing the island from perhaps fifty acres to twenty-five.

The resident birds on Heligoland and Sandy Island probably do not exceed a dozen species; but in spring and autumn the number of birds that use these islands as a resting-place during migration is so large that as many as 15,000 Larks have been known to have been caught there in one night, and the number of species of birds obtained on these two small plots of land equals, if it does not exceed, that of any country of Europe.

There are many species of Siberian and American birds which have never been obtained in any part of Europe except upon the island of Heligoland.

From time to time Herr Gätke has published lists of the species observed there and obtained by him, and these lists are so remarkable for the number and variety of the species included that many ornithologists have doubted their accuracy.

The authenticity, however, of the Heligoland skins is stated by Mr. Seebohm to be "beyond all possible question." The fact is, as he says, that this little island is the only part of the world of which the ornithology has been properly worked. Every little boy on the island is a born and bred ornithologist. Every unfortunate bird which visits the island has to run the gauntlet of about forty guns, to say nothing of blow-pipes and catapults. The flight and note of every bird is familiar to every islander. A new species is immediately detected. The fisherman steers with a gun by his side; the peasant digs his potatoes with a gun on the turf and a heap of birds on his coat. The common birds are eaten, the rare ones sold to the bird-stuffer, and the new ones taken to Herr Gätke. Long before sunrise the island is bristling with guns; after dark the fowlers are busy with their nets, and at midnight the birds commit suicide by dashing against the lighthouse.

Some idea of the mortality which ensues from the last-mentioned cause may be formed from the following graphic description of what takes place:—

"Arrived at the lighthouse, an intensely interesting sight presented itself. The whole of the zone of light within range of the mirrors was alive with birds coming and going. Nothing else was visible in the darkness of the night but the lantern of the lighthouse vignetted in a drifting sea of birds. From the darkness in the east clouds of birds were continually emerging in an uninterrupted stream; a few swerved from their course, fluttered for a moment, as if dazzled by the light, and then gradually vanished with the rest in the western gloom. Occasionally a bird wheeled round the lighthouse and then passed on, and occasionally one fluttered against the glass like a moth against a lamp, tried to perch on the wire netting, and was caught by the lighthouse-man. I should be afraid to hazard a guess as to the hundreds of thousands that must have passed in a couple of hours, but the stray birds which the lighthouse-man succeeded in securing amounted to nearly 300."

When we consider, adds Mr. Seebohm, that this has been

going on for more than a quarter of a century, and that the results have been carefully chronicled, the wonder is not that so many species of birds have occurred on Heligoland, but that so many have hitherto escaped detection. This, he says, must be accounted for on the theory that after all the appearance of birds on Heligoland is only accidental.

For some time previous to 1892 Herr Gätke had commenced to prepare his notes for publication, and in that year he completed and issued a volume which will ever remain famous in the annals of Ornithology. Written in German, however, it failed to attract the wide attention which it deserves, and it was not until the present year that an English translation by Mr. R. Rosenstock, edited by Mr. J. A. Harvie Brown, at length supplied what has long been a desideratum with English naturalists. Like everything which emanates from the publishing house of Mr. David Douglas of Edinburgh, it is a model of what a book of this kind should be, the typography, paper, and illustrations being all in their way excellent. Many of the illustrations are reproductions of pen-and-ink sketches by the author; not finished drawings such as might be expected from so accomplished an artist, but rapidly executed sketches very characteristic of the species figured, and sufficiently accurate to illustrate the author's remarks. There are, moreover, two portraits of the veteran ornithologist, one of which, representing him in his shooting dress with a large grey gull in his right hand and a gun in his left, forms a striking and most appropriate illustration.

To attempt to give anything like an adequate summary of the varied contents of this volume of nearly 600 pages is well-nigh impossible, but we may allude briefly to the more important features. Roughly speaking, it is divided into two portions, the latter part, amounting to two-thirds of the volume, being occupied with a *catalogue raisonné* of all the birds which have been ascertained to have been met with on this remarkable island, with very full notes upon every species; while the first two hundred pages are devoted to such subjects as the course of migration generally in Heligoland, direction of the flight, altitude, velocity, meteorological conditions influencing migration, the order of migration according to age and sex, and exceptional phenomena. Between these two sections we find a most interesting chapter on "Changes in the colour of the plumage of birds without moulting."

The statistics furnished by Herr Gätke under these several headings are some of them very curious, and to those who are not professed ornithologists will probably be new.

"A large portion of the migrants," says Herr Gätke, "travel within an east to west, another within a north to south, line of flight. Species which fail to find satisfactory winter quarters in the western countries of Europe, on arriving in these districts deviate from their westerly course, and pursue their journey in a southward direction.

"Those, on the other hand, whose autumn migration takes place in a southerly direction, persevere in their course from their breeding-station to the end of their journey, though some may make a more or less considerable deviation to the east.

"The predominant mode in which the migratory movement is performed is in a broad front or migration column, which in the case of species migrating to the west corresponds to the latitudinal range of their breeding area, and in those migrating southwards to the longitudinal extent of their nesting stations."

The view much discussed in recent years, that migratory birds follow the coast lines, the drainage area of rivers, or depressions of valleys as fixed routes of migration, can, in the opinion of Herr Gätke, hardly be maintained. Too many facts, to some of which he refers, are at variance, he says, with this assumption. Direct observations in Heligoland have established the fact that in autumn the migration proceeds from east to west, and in spring in the opposite direction. Not all birds, however, reach their winter quarters by proceeding in a westward direction, some being sooner or later obliged to turn southwards in order to reach their destination.

The following curious observation shows the close attention which Herr Gätke has paid to the subject on which he writes:—

"During the autumn migration it frequently happens that when out at sea birds are carried into air currents stronger than is suitable to their line of flight, a violent S.E. wind being especially unfavourable. To escape this wind blowing obliquely through their plumage from behind, they turn their body southwards and appear to be flying in that direction. This, however, is not the case. They do not make the least forward progress to the south, but their flight is continued in as exact a westerly course, and with the same speed, as though the birds were moving

under favourable conditions in the direction of the long axis of their bodies. This is shown in the most convincing manner by such flocks as happen to pass immediately over the head of the observer."

The altitude at which birds fly, and the velocity they attain during migration, are subjects to which Herr Gätke has paid special attention, and on which he discourses at considerable length. From experiments which have been made by other writers to test the average speed of birds in flight,—swallows, game-birds, falcons, and homing pigeons,*—we are inclined to think that Herr Gätke has overrated the speed at which migratory birds usually travel, except when moving before the wind; but, as he gives reasons for his conclusions, it would not be possible to refute his statements without a more complete examination of the details than could be here attempted.

Herr Gätke's work is an extremely valuable one to naturalists, not only because it embodies the results of fifty years' observations made at one particular station, and on that account most reliable, but also because it contains so many suggestive remarks which deserve the consideration of other observers, who, though less favourably situated than himself, may be able one day, with the aid thus afforded them, to deal effectively with some of the problems of migration as yet unsolved.

ON THE RACES AND VARIETIES OF THE POLECAT.

By Adolphe Drion, Jun.

In the 'Bulletin de l'Académie Royale des Sciences, des Lettres et des Beaux-Arts de Belgique' (ser. 3, t. xiv. pp. 365–68), a Belgian naturalist, M. Drion, Jun., has published an article with this title, which has probably escaped the notice of the majority of our readers. Whether his views on this subject are to be accepted seems to us questionable, considering the extreme variation in colour to which the Polecat is liable. This animal has now become so rare in most parts of England, in consequence of being trapped by gamekeepers on every possible oppor-

* See 'Zoologist,' 1886, p. 299; 1888, p. 308; 1892, p. 362; 'Nature,' 1887, pp. 335, 480, 552, 599; 1888, pp. 369, 474; 'Field,' 1887, pp. 114, 242 and 1891, Dec. 5th.

tunity, that it would probably be difficult to carry out such a series of observations as those made by M. Drion, for want of a sufficiently large number of specimens for examination.

It may be of interest, however, to know what M. Drion's views are on this subject, and we accordingly append a translation of his article. He says :—

"In Belgium there are two races of Polecat, the yellow and the black race. The yellow race has a rather short body; it is high on its legs; the claws are lengthy and straight; the under parts of the body, the thighs, and the feet, are of a very dark colour, but the flanks are golden yellow; the contour of the eyes and muzzle is of a yellowish tinge, approaching to grey; the tail brown and bushy, especially in the old ones. The Yellow Polecat generally haunts marshy places and the banks of streams, but occasionally dry places and the neighbourhood of dwellings. Averse to all training, it becomes shy and timid in captivity.

"The Black Polecat is of a more elongated form. It is not so high on its legs as its congener; its claws are shorter and more curved. The ears, the contour of the eyes, and muzzle, are of a pure white, which contrasts strangely with the dark fur; the coat is black, although the sides show a washed-out yellowish tinge. It usually affects dry places in the neighbourhood of dwellings, but is occasionally found in river-banks and marshes. In captivity it is untamable. Not only is it, like the Yellow Polecat, rebellious to any kind of training, but it is fierce and bloodthirsty, even furiously attacking the hand that feeds it. Besides these two races, characterized by an appreciable difference in the structure of the body, the peculiar shape of the claws, the colour of the coat, and by their habits, there are intermediate shades which result from crossing. These are (1) the brownish yellow Polecat—a cross between the pure yellow and the pure black—subelongated and of medium shape. (2) The bronze golden-yellow. (3) The citron-yellow. (4) The grey, mixed with tarnished-yellow. (5) The *Patois à plastron*, an accidental variety.

"The Polecats shaded with bronzed golden-yellow, citron-yellow, and *à plastron*, are the progeny of the brownish-yellow Polecat crossed with the pure yellow or the black.

"The grey mixed with tarnished-yellow differs completely from the others by its coat, which is of a much more uniform tint over the whole body.

"I have not been able to decide upon this point, namely, whether it constitutes a distinct race from the two preceding; whether it results from a cross; or whether, in fact, it is not an escaped Ferret. The last-named seems more likely, for the Polecat-ferret is less sensitive to cold than the albino Ferret; and consequently much less liable to die of cold in a state of liberty. In the Natural History Museum at Brussels there is a young black Polecat and a young grey one, labelled 'young,' without comment. The difference in colour between these two mounted specimens is striking. The grey Polecat closely resembles the half-bred Ferret. It would seem that this was the result of a cross between a dusky Polecat and an albino. The Polecat *à plastron* is remarkable for a white or yellow spot on the throat.

"I have a grey specimen with a white throat, and a black specimen with a throat equally white; and I have seen black ones which have a yellow throat. The brownish-yellow Polecats are the commonest. The yellow ones and the black ones are somewhat rare. The two last-named are examples of the pure breed. The grey Polecat and those with the light throat are rarely met with. My observations are founded upon two hundred specimens of all shades, of which one hundred and eight were caught by myself, and ninety-two were brought to me by keepers.

"It was long supposed that the difference in colour between the yellow and the black Polecats was merely the result of local influences—accidental or climatic—or of age or sex. I can testify to the contrary, because I have caught yellow Polecats, male and female, young and old, showing the distinctive characteristics of their respective races. At all seasons I have caught black ones, young and old, male and female, from one end of the year to the other. My experience, moreover, confirms these views. In the month of September I secured two young male Polecats, yellow and black. I kept them in separate cages for three years, during which time there was, positively, neither change of colour nor change of shape. The yellow one remained yellow in summer, at the period of moulting, and in winter. The black one always retained the same dark coat. I noticed that the black one was much fiercer and bolder. He was also more active, and generally climbed to the top of his cage when disturbed. The yellow one was timid and less active in his

movements. He was always scratching at the floor of his cage, trying, as it were, to dig a burrow. In those of intermediate colour, the claws of those whose pelage are yellowish are more slender and less curved than the claws of the dusky Polecats. To appreciate the difference in the claws, one must secure examples of pure breed. The very young Polecats, of both varieties, scarcely a few months old, are dark. It is difficult, therefore, to decide at an early age whether they belong to the yellow or to the black race. The best furs are those of the pure yellow Polecat, the bronze-yellow, and the citron-yellow. The skins of the black Polecats are not much esteemed, and rarely come into the market. Finally, in every case, the adult male is always about one-third larger and stouter than the female."

THE LONG-TAILED FIELD MOUSE OF THE OUTER HEBRIDES: A PROPOSED NEW SPECIES.

By W. E. de Winton.

In the summer of 1894 I had the good fortune to visit the island of Lewis in the Outer Hebrides, and there found the Long-tailed Field Mouse very common, as recorded in the 'Annals of Scottish Natural History' for January, 1895, p. 53.

This mouse is very distinct from *Mus sylvaticus* of the mainland, and I have only delayed in describing it as I was in hopes of again visiting the island this year. But though I have been unable to carry out my wish, the next best thing has happened; for my friend R. W. Pinney, a keen naturalist, has been shooting in the island of Barra, and has kindly sent me specimens, bringing up the number of my collection to over twenty, and confirming my opinion that this peculiar form would be found on all the islands of the group on which *Mus sylvaticus* occurs. This will show that I am not in a hurry to add to the British list before having fair material to work upon.

I propose for this mouse the name of

Mus hebridensis, *sp. n.*

Resembling *Mus sylvaticus* in general form and colour, but having far smaller ears in proportion to its size; longer hind feet, which are also much stouter in the males; the form generally of

a distinctly stouter build, which is very striking in animals in the flesh, but which simple length-measurements cannot convey. In old specimens the colour of the under parts is generally dusky or sandy, with no distinct line between the upper and under parts, and I have never seen a specimen with a typical *sylvaticus* belly; the tail is almost uniformly brownish grey, and shorter and thicker in proportion.

The following table, taken from a few specimens of my own collecting, will show how *Mus hebridensis* compares in measurements with its nearest allies *M. sylvaticus* and *M. flavicollis*; that in size it about equals the latter, while the hind feet are larger, but the ears do not equal the dimensions of those of the much smaller *M. sylvaticus*.

Adults, with worn teeth.

Young, still in the grey pelage.

All measurements are in millimetres. The length of the tail does not include the terminal hairs, and that of the hind foot does not include the claws; the ear is measured on the inside from the notch; the measurement of the head and body and tail may be relied on as giving the total length of the animal in the flesh.

	M. HEBRIDENSIS.				M. FLAVICOLLIS.				M. SYLVATICUS.			
SEX, AD.	♂	♂	♂	♀	♀	♀	♂	♀	♀	♀	♀	♂
Head and Body .	106	106	112	108	108	110	110	115	93	92	92	97
Tail	96	99	100	95	108	115	112	112	86	82	78	85
Hind-foot . . .	25	25	25	23½	24	23	24	24	22	22	22	23
Ear	16	16	16	15	18	18	18	18	17	16	17	17
SEX, JUV.	♀	♀	♂	♂	♀	♀	♂	♂	♂	♂	♀	♀
Head and Body .	96	92	94	94	81	84	68	90	83	83	71	78
Tail	82	81	86	83	84	83	60	93	75	79	59	70
Hind-foot . . .	24	24	23½	25	21	22	20	24	22	21½	20	21
Ear	13½	15	15	15	16	16	16	17	16	16	16	16

This, following so soon upon my article in 'The Zoologist' of December, 1894, recording *Mus flavicollis*, Melchior, as a

British mammal, will no doubt make many naturalists sceptical; but I have only to say that in this case there is far less difficulty in reconciling the fact than in that widely distributed and unisolated form, and it emphasizes my former remark that there is much still to be learned about the British Mammalia, and that English naturalists have hitherto culpably neglected their duty.

Here let me again draw attention to the serial collection of small European mammals (invaluable to any one working in this line) being got together through the efforts of Mr. Oldfield Thomas at the British Museum (Natural History), and I ask any one who wishes to advance the knowledge of our native animals to contribute. Bats and Harvest Mice, *Mus minutus*, will be especially acceptable.

When we consider the length of time which must have elapsed since the islands of the Outer Hebrides were joined to the mainland, the complete isolation, so far as small land mammals are concerned, and the improbability of fresh blood being introduced, save at very rare intervals, it would be surprising if differences did not exist. Who can say whether these islands ever were joined to Scotland? or were not upheaved long prior to that country as it now is? Why do the rocks show such a vast difference? I am not much of a geologist, but I was very much struck with the beauty of the rocks, the crumpled foliated gneiss being so different from anything on the mainland. Then again we must consider that for many years there has not been a tree or shrub on the islands—I do not take into account the lately-planted specimens at Stornoway Castle and elsewhere—and the heather is extremely short. These are the conditions that the Field Mouse has to put up with, and small blame to him if he puts on bigger boots and wears less widely open ears in that land of rain.

[Messrs. Harvie Brown and Buckley, in their 'Vertebrate Fauna of Argyll and the Inner Hebrides,' 1892, state that they have examined specimens of the Long-tailed Field Mouse from several mainland localities from north to south, and that it is abundant in all the Inner Hebrides. Nothing is said as to any variation in size or colour from the typical *Mus sylvaticus*. In their previously-published volume on the Outer Hebrides (1888) this species is only provisionally included in the list of Mammals, not having been definitely recognised as occurring there at that date.—Ed.]

ON THE ORIGIN OF THE TERMS "COB" AND "PEN."

By the Editor.

Professor Newton, in his excellent 'Dictionary of Birds' (art. "Cob"), quotes Yarrell (ed. 1, vol. iii. p. 130), to the effect that, "in the language of swanherds, the male swan is called a 'Cob,' the female a 'Pen'; these terms refer to the comparative size and grade of the two sexes," but (he adds) "corroboration of the first statement has been sought in vain, while the second is hardly intelligible."

Having recently had occasion to look over my notes on "Swan-marks," which have been accumulating for some years, I have come across several which throw light on the above quotation, and justify the first part of Yarrell's statement, the concluding part being evidently founded on a misapprehension.

The origin of the names "Cob" and "Pen" for the male and female swan respectively is traceable to the ancient "Laws and Orders for Swans," which were in vogue at a time when it was customary throughout England (instead of as now on one river only—the Thames) to mark all swans on the bill to denote ownership. There was then an office of "Master of the Swans throughout England," and commissions were issued periodically for holding "Swanherds Courts" or "Swan-Mootes," at which "Orders" were made "where and when they were fit and necessary for the preservation of swans." These "orders" were copied out and made known by proclamation in market towns. Two such copies are in my possession; one of Elizabeth's time in MS., dated 1598, the other of Charles the First's time, printed and dated 1632. The former is entitled 'The Orders for Swannes exemplified out of the printed Orders for Swannes the xxvjth of marche, 1598'; the latter, a small quarto of considerable rarity, is entitled, 'The Orders, Lawes, and Ancient Customes of Swanns, Caused to be printed by John Witherings Esquire, Master and Governour of the Royal Game of Swans and Signets throughout England. Printed by August Mathewes, 1632."

With the exception of this copy I have seen but two others, one of which was in possession of the late Mr. Stephen Tucker, Somerset Herald, the other in the British Museum (C. 31, e. 26).

Hone quotes an edition of 1570 ('Every Day Book,' ii. 958), and Lowndes mentions an edition of 1664 with a little variation in the title, chiefly in regard to the orthography; but of these I have not met with any copy. In those which I have examined, the sexes of swans are distinguished as "Cob" and "Pen." Thus in 1570, and again in 1598, it was "ordeyned" that if any brood be found being led by one swan, the swan and cygnets "shall be seized for the king, till due proof be had whose they are, and whose was the swan that is away, be it *cob* or *pen*"; for if the swan of one owner paired with that of another, there was a regulation as to the division of the brood in swan-upping time, when the cygnets were allotted and marked accordingly.* The printed rule in 1632 was thus worded:—"§ 7. In all common streames and private waters, when Cignets are taken up, the owner of the *Cob* must chuse the first Cignet, and the *Pen* the next, and so in order. But if there be three, then the owner of the Grasse where they breede must have the third, for the spoyle of his Grasse." At the present day, in the case of a mixed brood, the cygnets are divided between the two owners.

Nor is it only in the 'Lawes and Orders for Swannes" that we find a recognition of these terms to distinguish the sexes. Ben Jonson, in 1611, has the expression "I am not taken with a *cob* swan like Leda" ('Catiline,' act ii. sc. 1); and Henry Best, of Emswell, in the East Riding of York, in his 'Rural Economy in Yorkshire,' published in 1641, has a chapter on "Swannes and theire breed," in which he tells us that "the hee swanne is called the *cobbe*, and the shee swanne the *penne*."

As to the derivation of the words, *cob* is evidently the A. Sax., *copp*; O. Fris., *kop*; Germ., *kopf*; Lat., *caput*; signifying the crown or top of the head, and, in the sense in which it was used by swanherds, having reference to the prominent *knob* at the base of the bill. Sir John Maundevile uses it for summit, as in the expression "the *cop* of the hille," as also does Wycliffe in a similar expression, "and they ledden him to the *coppe* of the hil on which her cytee was bildid to cast him down" (Luke iv. 29). The word was applied also to denote the crest of a bird. The gloss on Gautier de Bibelesworth explains "geline huppée," "*coppede* hen"; and Elyot gives "'stymphalide,' a *coppe* of

* See my lately published article on "Swan-upping," in 'The Field,' Sept. 28th, 1895.

fethers whiche standeth on the head of a byrde." In Norfolk (where it is said the term "copple-crown" still has this meaning), Sir Thomas Browne, in 1668, applied it to the Spoonbill, which he characterised as "remarkable for its white colour, *copped* crown, and spoon or spatule-like bill." (See 'Zoologist,' 1877, p. 425.) Thus we may take it that the word *cob*, a variant of *cop* (still seen in "coping-stone"), was applied to the male swan by reason of the prominent knob at the base of the bill, which is more largely developed in the male than in the female.

As to the name *pen*, it is doubtless a contracted form of *penne*, not unfrequently used by the old writers for "feather." In the 'Vision of Piers Plowman' reference is made (v. 7923) to the "*pennes* of the pecok"; and in the 'Golden Legend' we read that "the foule that hath but fewe *pennes* or fethers may not well flee."

But seeing that swans of both sexes are feathered, like other birds, it may be asked, why should the term *pen* be restricted to the female bird? Probably from her habit, when sailing with her brood, of arching her wings proudly above her back, thus conspicuously displaying her *pennes*. In some of the old writers we find a special term—"busking"—to denote this peculiar action; to busk, or bush out the wings, evidently from *buske* or *boske* (O. F. *bosc*) as "bush" was anciently written, *e.g.*, by Chaucer. Spenser uses the word *buskets*, and Shakespeare, in 'The Tempest' (act iv. sc. 1), has "my *bosky* acres and my unshrubb'd down." A direct application of the term to the bird under notice may be found in 'A Tale of two Swannes,' printed in London by Roger Ward, for John Sheldrake, in 1590. Thus:—

> "Not far from hence stands many a milke-white Swanne,
> Attending for to entertaine their Prince;
> Among the which was one of chiefe accompt
> That *busked* up her wings in greatest pride,
> And so salutes this worthie companie."

From the foregoing remarks it will be seen that there is some corroboration of Yarrell's first statement, hitherto, as Professor Newton says, "sought in vain"; while in regard to his second, "hardly intelligible," the explanation above given may perhaps be more acceptable.

NOTES AND QUERIES.

MAMMALIA.

Hybrid Manx Cats: Gradual restoration of Tail.—A friend has sent me some curious statistics in reference to the progeny of a female Manx Cat and an ordinary Tom Cat in his possession. The successive litters consisted of three on each occasion. Thus:—

	No Tails.		Half Tails.		Full Tails.
1st litter	3	...	0	...	0
2nd „	2	...	1	...	0
3rd „	1	...	2	...	0
4th „	0	...	2	...	1
5th „	0	...	1	...	2
6th „	0	...	0	...	3

The gradual elimination of the tailless condition characteristic of the famous insular grimalkins is somewhat singular, and points out the strength of the ancestral reversion which is always striving to assert itself in all breeds of domestic animals.—Robert Service (Maxwelltown, Dumfries).

Distribution of the Alpine Hare in S.W. Scotland.—In several of the local reports from the southern moors notice has been taken of the shooting of Blue Hares. This alpine species may now be considered thoroughly established in all suitable localities throughout the south and south-west of Scotland. It was introduced at Glenbuck in 1861. Within the next four years it had spread to the Lowthers and contiguous heights, to Queensberry, and to many of the hills at the head of Annandale. Then it began to progress westwards to the Southern Highlands, and soon populated all the picturesque mountains from whence flow the Galloway rivers on the one side, and the Ayrshire streams on the other. A great extension of the species took place during the hard winters of 1878, 1879, and 1880, and specimens were got on such isolated spots as Criffel and Screel, and even on the Kirkgunzeon moors; and I was shown a young one that had been mistaken for a rabbit and shot on Dalscairth—a low and unexpected situation in which to find this height-loving species.—Robert Service (Maxwelltown, Dumfries).

[For further particulars on this subject see Zool. 1893, p. 265.—Ed.]

A White Hare in Essex.—On Manning Farm, about two and a half miles from Laindon, during the last week of September, a pure white Hare was shot, but with eyes of the ordinary colour.—Samuel Hunt (Southend).

[For other notices of white Hares, see Zool. 1889, p. 143; 1890, p. 70: and 'Field,' 29th Aug. 1891, p. 332.—Ed.]

BIRDS.

American Yellow-billed Cuckoo in Dorsetshire. — Through the courtesy of Mr. Rowland Ward, on Oct. 7th I had placed in my hands for examination a specimen, still unskinned, of *Cuculus americanus*, which had been picked up dead on Oct. 5th in a garden near Bridport. Never having had an opportunity of examining a bird of this species in the flesh before, I naturally regarded it with some curiosity, and immediately took a note of its measurements, general appearance, and colours of the soft parts. Comparing it first of all with the life-size coloured figure given by Gould, in his 'Birds of Europe,' I remarked a general agreement with the bird in hand, except in the following particulars. In Gould's figure the eye is bright red (as in *C. erythrophthalmus*), whereas in the bird before me it was hazel, with the eyelids lemon-yellow. Gould has shown the legs and feet of a greenish brown, no doubt in consequence of having drawn his figure from a dried skin in which the colour had faded: these parts in a freshly-killed specimen are lead-colour. In one other respect Gould's figure might be improved. The inner webs of the flight-feathers are extensively tinged with cinnamon, and the outer webs also to a less extent—a noticeable feature when the wings are extended, though less apparent when closed. In Gould's figure the closed wings are too much the colour of the back, which is olive-grey. It is observable that in the letter-press which accompanies his plate he has described the irides as hazel, and the legs and toes blue, but unfortunately, as so often happens, the plate does not accord with the text. Turning to the very useful 'Key to North-American Birds,' by Dr. Elliott Coues, the accuracy of his diagnosis of this species (p. 476) became apparent:—"Bill [long and decurved] black, extensively yellow below and on the sides of upper mandible. Feet [short, zygodactyle] dark plumbeous. Above satiny olive-gray. Below pure white. Wings [with ten primaries] extensively cinnamon-rufous on inner webs of the quills [less conspicuously so on the outer webs]. [Tail-feathers 10, graduated.] [Two] Central tail-feathers like the back; the rest black, with large white tips, the outermost usually also edged with white. Very constant in colour, the chief variation being in extent and intensity of the cinnamon on the wings, which sometimes shows through when the wings are closed, and even tinges the coverts. Young birds differ chiefly in having the white ends of the tail-feathers less trenchant and extensive, the black not so pure; this state approaches the condition of *C. erythrophthalmus*, but does not match it

In the above extract I have inserted in square brackets such additional remarks as were suggested by a comparison with the fresh specimen. The measurements I found to be as follows:—Total length 11·75 in.; extent of wing, 16 in.; bill from gape, 1·25 in.; wing from carpus, 5·50 in.; tail,

6 in.; tarsus, 1 in. The plumage was in perfect condition, and there was no abrasion of the extremities of the wings or tail-feathers such as there certainly would have been had the bird made its escape from captivity. As above stated, it was picked up dead in a garden near Bridport, where it had been previously observed flying about. It is possible, of course, that its advent to this country may have been aided by a temporary rest in the rigging of some homeward-bound vessel, but of this there is no evidence. The last specimen of this bird recorded to have been met with on this side of the Atlantic was also picked up dead, in a wood near Aberystwyth in October, 1870 ('Handbook of British Birds,' p. 124), and in April, 1871, was exhibited at a meeting of the Zoological Society (P.Z.S. 1871, p. 299), by Mr. Dresser, who remarked that it showed no signs of having been in captivity, and was apparently a young bird. The specimen now under notice was evidently adult, as appeared not only by the measurements and the general absence of light edges to the feathers of the dorsal plumage, but also by the fully-developed bill and feet. This makes the sixth instance in which the American Yellow-billed Cuckoo has been met with in the British Islands.—J. E. Harting.

The Rate of Flight in Birds.—Mr. Warde Fowler makes incidental mention (*supra*, p. 309) of a subject concerning which there seems to exist much difference of opinion among naturalists, *viz.* the rate of flight in birds. Since Mr. Fowler only "roughly calculated" the speed (150 miles per hour) at which the birds were travelling, it were unfair to take it as altogether expressive of his opinion; and I need only say that from repeated observations (made to satisfy myself as to the accuracy or otherwise of the estimates of Michelet and the Duke of Argyll) I conclude that Swallows very rarely exceed 100 miles per hour. Indeed, so far as I can judge, the ordinary flight of these birds during their migrations is from fifty to sixty miles per hour. Those who have noticed these migrations will to a greater or less extent agree with me in regarding the flight on such occasions as peculiar thereto—less brilliant and evolutionary, but more steadily maintained than the usual flight, being, in short, that of birds on a serious errand. Calculations made after the manner of Mr. Fowler's ("by noting the progress from point to point") are apt to be faulty, owing to the great difficulty of knowing for certain when birds are passing a distant point. It would be of interest and value if readers of 'The Zoologist' would give the benefit of their experience in this matter, with a view of arriving at some unanimity of opinion.—W. C. J. Ruskin Butterfield (Stanhope Place, St. Leonards-on-Sea).

[The latest contributions to knowledge on this subject which have reached us are to be found in the recently-published English translation of Herr Gätke's 'Birds of Heligoland,' noticed in the first article of the present number. In the chapter on "Velocity of the Migration Flight" (p. 63)

some very remarkable statements are made with regard to the speed of certain species, so remarkable indeed that to most persons they must appear incredible. But they are made so positively that we must, at all events, assume that Herr Gätke has very good reasons for believing them to be true. Briefly put, what he says amounts to this, that in the case of the Hooded Crow "a speed of migration flight of no less than 108 geographical miles per hour has been established" (p. 64); and again, a comparison of his own observations on Heligoland with those made by Mr. Cordeaux on the east coast of England shows that these sluggish flyers pass over the 320 miles of German Ocean in three hours, which gives a velocity of nearly 108 geographical miles per hour (p. 68). The northern Bluethroat, he says, on its spring migration from its winter quarters in Africa, extends its flight in the course of one single spring night up to 54° N. latitude, accomplishing a distance of at least 1600 geographical miles within the space of nine hours (p. 65), "giving the almost miraculous velocity of 180 geographical miles per hour" (p. 66).

In the case of the American Golden Plover, *Charadrius virginicus*, flocks have been met with at a distance of 400 geographical miles east of Bermuda flying in a southerly direction on the way from their breeding places in Labrador to Northern Brazil. The distance between these points is 3200 miles, and since there is no point between on which they could alight for rest, they are obliged to perform the entire journey in one uninterrupted flight. The velocity in 15 hours would amount to 212 miles per hour.

These examples suffice to show that the estimates of speed put forward by Herr Gätke are considerably in excess of what other observers believe to be possible. We should hesitate to accept his figures in the case of the Bluethroat and the Golden Plover for two reasons. First, it appears impossible to prove that the Bluethroats which arrive in Heligoland from Egypt have not rested *en route*, and travelled by stages. He says himself (p. 10):—"It is, however, absolutely impossible to ascertain the manner and method of arrival of most of the visitors, even by the most careful observation; this is especially the case with the small song-birds and similar species, whose number increases with each minute, without our being able to see a single bird descending from on high, or shaping its course in any one particular direction." Secondly, in the case of the Plover, Herr Gätke makes no allowance for the fact that many birds which are not web-footed can and do temporarily alight upon the sea, or upon passing ships, and after a rest resume their journey. This has been observed not only in the case of different species of Sandpipers and Plovers, but also in the case of small passerine birds (*e. g.* Pipits and Crossbills, *cf.* Newton's 'Yarrell,' ii. p. 220), and even in the case of such soft-feathered birds as Pigeons ('The Field,' June 26th, and July 3rd, 1875).

Mr. Butterfield is convinced "from repeated observations that Swallows very rarely exceed 100 miles per hour." An experiment made between Pavia and Milan (Zool. 1886, p. 299) gave the rate of speed at 87½ miles per hour. Another experiment, made in Sligo (Zool. 1888, p. 308) with a House Martin, taken from a nest containing young, and liberated at a distance of 10 miles, resulted in the bird reaching the nest in 12 minutes, a rate of speed equivalent to 50 miles per hour. A similar experiment was made with a Swallow, which was taken from the nest near Roubaix and liberated in Paris (Zool. 1889, p. 399). It returned home in an hour and a half, at the rate of two miles a minute, or 120 miles per hour. If these cases are to be relied on, Mr. Butterfield's estimate of 100 miles per hour as the average speed of Swallows is doubtless very near the mark; for we may assume that a bird having young in the nest, as an incentive to return quickly, would travel at greater speed than on ordinary occasions. Nine persons out of ten accustomed to observe the flight of birds would probably consider the speed of a Swallow to be infinitely greater than that of a Blue-throated Warbler, or—to take an allied species with which they would be more likely to be better acquainted—a Redstart. What then are we to think of Herr Gätke's estimate above quoted, which places the sustained speed of the Bluethroat when travelling from Egypt to Heligoland at 180 miles per hour? It seems to us incredible, and at all events cannot, we think, be regarded as a definitely ascertained fact.—Ed.]

The Autumnal Movements of Swallows.—Almost any fine forenoon in September astonishingly large numbers of Swallows may be seen thronging the Sussex coast during their passage eastward. The flights commence generally shortly after sunrise, and continue up to, or even beyond, noon. At first detached parties, more or fewer in number, appear and pass onward; these being succeeded—but not always immediately—by the more regular stream, which proceeds with an uncertain continuity to the usually somewhat abrupt termination—reminding me indeed, throughout, of a snow-storm. In confirmation of the opening sentence, I may be allowed to transcribe from my note-book some particulars of a migratory flight which took place on the morning of September of last year. A friend and I took up our quarters on the coast a little to the west of St. Leonards, where a projecting bluff enabled us to remark every bird that passed its outermost point, and during four hours (from 8 to 12) I counted the passing birds for one minute each time the minute-hand of my friend's watch reached the successive numbers —*i. e.* I made twelve counts per hour at intervals of four minutes. The average proved to be 53 per minute, or, roughly, 3000 per hour. This means that 12,000 individuals passed us during the four hours of our stay. It should be borne in mind that this number does not represent the actual passage of birds. Likely enough many thousands passed before our arrival. I think this may be taken as a fair example of what happens more or less

daily throughout September. Sometimes the flights consist wholly of young and at others of old birds. Now and again a few Martins accompany them, and even a Sand Martin or two, but there is always a remarkable homogeneity in the separate flights. Considered with regard to the faculty whereby the phenomena of migration are performed, it is doubtful whether much progress has been made since attention was called to this subject by Prof. Newton twenty years ago in his British Association Address, "On certain neglected subjects of ornithological investigation" (*q. v.* Zool. 1875, pp. 4640–41, as also the admirable article "Migration," in his 'Dictionary of Birds,' pp. 547–571). In another direction, however, British ornithologists have employed themselves with some diligence—but with what degree of wisdom remains to be determined. One cannot but feel a little disappointed in the deductions of Dr. von Middendorff ('Die Isepiptesen Russlands, 1855') and Professor Palmén ('Om Foglarnes flyttningsvägar, 1874'), although it would not be easy to overrate their services in suggesting and stimulating research.—W. C. J. Ruskin Butterfield (St. Leonards-on-Sea).

[Here, again, we would suggest a comparison of the observations above referred to with those published by Herr Gätke, who gives reasons (p. 66) for "the wide divergency between the results of his own observations and those arrived at by Dr. von Middendorff. An English translation of Prof. Palmen's 'Report on the Migration of Birds,' submitted to the second International Ornithological Congress in Budapest, 1891, and full of suggestive information, is printed, with a map, in the Smithsonian Report, 1893, pp. 375—396.—Ed.]

Escape of a Caged Eagle.—On Oct. 2nd a Golden Eagle in the Zoological Gardens at Bristol contrived by an accident to make its escape. It was in an open-air cage with two other eagles, and on the entry of the keeper it flew up to the wire that formed the roof, and hung from the netting with its claws. The wire being old and the bird heavy, several of the meshes broke and left a large hole, through which, to the astonishment and dismay of the keeper, the eagle quickly managed to escape. It flew over the river towards the Leigh Woods, and the head keeper, Mr. Blunsden, followed in that direction. He passed through Failand and all round the grounds of Sir Cecil Miles, but without finding the bird. That it was afterwards seen over St. Philip's is probably accounted for by the fact that there was still a very high wind prevailing at the time, and that the bird after its captivity would not have the strength to fly against it for any great length of time. There is little hope that the bird, which was a female, and had been presented to the Gardens by Sir Greville Smyth, will be captured alive. Should any of our readers hear shortly of a Golden Eagle being shot or trapped, it would be well to ascertain whether it is the bird which has so lately made its escape, bearing traces of confinement, and if so, to report it to the Secretary at the Zoological Gardens, Bristol.

Black Tern in Wales.—As the Black Tern, *Hydrochelidon nigra*, appears to be a rare bird in Wales—Mr. Salter (p. 249) records a solitary instance of its occurrence at Aberystwyth—it may be well to note that I saw one of these birds near a pool of mine on July 26th last, never having observed one in this district before.—C. S. MAINWARING (Cerrig-y-druidion, Trefnant, North Wales).

Jackdaws hawking after Insects.—During some of the bright clear days of April both Jackdaws and Starlings were observed hawking after insects in the air, after the manner of Swallows, for many hours at a time during the warmer period of the day. Probably they were catching the little beetles with red wing-cases (Aphodii) that swarm in myriads on fine days at that season, and rise to great heights in the air. Starlings often hawk for insects in the manner described during the autumn months, but I do not remember ever having seen them or Jackdaws indulging in such habits so early in the year. The mention of Jackdaws reminds me of an amusing incident I once witnessed. A rough shaggy pony was reclining in a pasture field, and two Jackdaws were perched on his back engaged in pulling out beakfuls of hair with which to line their nests. The pony looked over his shoulders at them, and several times suddenly rolled over on the grass with the evident intention of catching and crushing the birds beneath him. Needless to say, the Jackdaws were too much on the alert to be caught in this manner, but flew up at once, settling again on his back to resume operations as soon as the pony had returned to his reclining posture.—ROBERT SERVICE (Maxwelltown, Dumfries, N.B.).

[We have frequently observed Jackdaws treating Fallow-deer in this way in the spring, and robbing them of hair to line their nests with. Their mode of procedure on such occasions has been described in 'The Zoologist' for 1878, p. 68.—ED.]

Twite Nesting in Confinement.—Mr. G. C. Swailes, writing in the 'Avicultural Magazine' (No. 11), reports that during the past summer a pair of Twites, *Linota flavirostris* (Linn.), nested and reared their young in his aviary, which he describes as "quite out in the country." He says:—"The hen commenced to build on May 14th, and laid her first egg on the 17th, laying altogether five eggs and sitting closely after the third was laid. I did not again look at the eggs, but saw the old birds busy feeding on June 2nd and following days. I looked in the nest on the 8th, hoping to find some fine young birds, but the nest contained only one poor starved thing which died on the following day: the weather was very stormy at the time they were hatched, and I think this was the cause of their doing so badly. On the 15th I noticed that the hen had nearly completed another nest, and she laid on the 16th and three following days. Having a Redpoll

nesting at the same time, I gave her two of the Twites' eggs, making up the number for each with infertile eggs: both birds hatched on the same day; the two in the Redpoll's nest perished at once, though she is a good feeder, and has reared two broods of her own this season. The Twite successfully reared hers, and they left the nest on July 19th, and are now very fine birds and normally coloured. Young Twites are not nearly so precocious as Redpolls; they were a long time before they attempted to peck for themselves, and even now (August) clamour to the old ones for food, whereas I have seen young Redpolls, a week after leaving the nest, shell hard canary seed. My birds have no soft food given them, but as much of the flowering top of the dwarf grass, dandelion, and hardhead tops, thistle, plantain, &c., as they wish, and as many aphides off rose, apple, or plum trees as I can at the time obtain; infested branches being put in the aviary for the birds to peck them off. The latter, I consider, are very essential for the successful rearing of Finches in confinement, especially for the first few days after they are hatched.—G. C. Swailes.

A Crane traced from its Nest to its Winter Quarters.—According to the Cairo correspondent of 'The Times,' Slatin, the recently escaped prisoner of the Khalifa, relates the following interesting occurrence. In December, 1892, the Khalifa handed him a small metal capsule, ordering him to open it and explain what it meant. It contained two small slips of paper each about the size of a visiting card, with an inscription in German, French, and English, stating that the capsule was attached to the neck of a Crane bred on the estate of Herr Falz-Fein, at Tskanea Nova, in the province of Taurida, South Russia (just north of the Crimea), who had released the bird, and requested any future captor to communicate to him particulars of date and place. Slatin, who speaks only from memory, for he was not allowed to retain or even copy the writing (the possession of any European writing being a punishable offence), thinks that the date of the bird's release was June or July, 1892. It was killed about November of that year, in Nubia, at Darel Shaigia, and the capsule was sent to Younes, the Emir of Dongola, who forwarded it by special messenger to the Khalifa, at Omdurman, a total journeying of about 800 miles by camels. Slatin has written to Herr Falz-Fein, informing him of the incident, the remarkable point of which is, that the paper reached the only man in the entire Soudan who could comply with the wish of the sender of the message.

Honey Buzzard Nesting in Herefordshire.—It may be of interest to note that during the past summer a pair of Honey Buzzards attempted to establish themselves in Bishopswood, near Ross, Hereford, but unfortunately, through the ignorance of a keeper, both birds were shot and their two eggs taken. Through the kindness of Mr. W. C. Ashdown, the taxidermist

in Hereford, I was able to examine the birds and his notes on them, which contain the following interesting particulars:—Cere, grey; iris, bright orange-yellow, showing that the birds were adult; contents of crop, wasp grubs, some pieces of the wasp's nest still adhering to the base of the bill of the female bird. It seems a pity, seeing the nature of the food of the Honey Buzzard, that such beautiful and useful creatures are not allowed to live in peace; but Bishopswood is an estate on which the landlord does not reside, and the keepers, no doubt, kill everything that does not actually increase the stock of pheasants. Now that Major McCalmont has come into the property, we may hope that so good a sportsman will endeavour in future to improve matters, and protect the Honey Buzzards, when next a pair visits this locality. I am informed that some years ago £40 was offered for a pair of these birds, with the eggs and nest, in this locality; but in the present case there was no question of bribe, only ignorance in mistaking the birds for Kites.—W. E. DE WINTON.

Hobby in Wiltshire.—It may be of interest to know that a Hobby (*Falco subbuteo*) was shot at Seend, near Melksham, about the second week of September. It was seen flying about in company with three others, but its sex was not positively ascertained, on account of its body having been thrown away by the amateur who skinned it. It was eventually sent to Mr. H. W. Marsden to be preserved, and through his courtesy I was enabled to examine the skin.—C. B. HORSBRUGH (4,Richmond Hill, Bath).

Immigration of the Solitary Snipe.—The Solitary Snipe, *Gallinago major*, is an annual visitor to this country in autumn, and so far as my experience goes, arrives long before the majority of the Common Snipe from the Continent put in their appearance. The name "Solitary" is well bestowed, although the contrary has been asserted (see Stevenson's 'Birds of Norfolk,' vol. ii. p. 30). I have never heard of a wisp of these birds being seen, or even a couple being flushed at the same time, although one day in the last week of August (twenty years ago), I came across three on the same marsh (the town marshes at Aldeburgh, Suffolk), two of which were bagged. But they were a long way apart, and on dry ground. They were easily recognizable from the Common Snipe (of which a few home-bred birds were about in the dykes) by their heavier flight, and by the white outer tail-feathers, which were flirted as the bird rose. In these same marshes, on Aug. 21st, 1876, the late Mr. N. F. Hele, of Aldeburgh, shot one in the dusk as it was running on the ground; and the late Mr. Herbert Greenwood informed me that he had shot several there at intervals, late in August or early in September. I suspect they may be found there every year, for this locality lies right in the way of immigrants from the Continent. As a rule, these birds affect drier situations than the Common Snipe, as I have already observed in my 'Handbook of British

Birds' (p. 51), where several instances in support of this statement are noted. As additional instances I may mention one shot in a dry clover-field, North Riding of York, Sept. 24th, 1858 (Field,' Oct. 23rd, 1858), and another on a dry bean-stubble, Northants (Zool. 1880, p. 444). During the present autumn one was shot near Pickering, Yorkshire, on Sept. 21st; another "in a dry water-meadow" at Eaglesham, Renfrewshire, Sept. 27th. Instances of the occurrence of the Great Snipe here in spring are rare. One was shot near Lowestoft, in April, 1851 (Zool. 1851, p. 3175), and there is a record of this species having nested near Wroxham, in April, 1846 (Zool. *l. c.*). But the late Mr. Stevenson, who enquired carefully into the circumstances, and examined one of the eggs taken, has shown good reason for concluding that the nest was that of a Common Snipe ('Birds of Norfolk,' vol. ii. pp. 300–301). This bird is much rarer in Ireland than in England; of late years it has been recorded from Co. Cork (Zool. 1884, p. 149), Co. Galway (Zool. 1888, p. 33), and Co. Mayo (Zool. 1893, p. 434). As to the weight of the Solitary Snipe, I think Stevenson's statement (*op. cit.*, p. 302) that the usual weight is from 6½ oz. to 8½ oz. is quite correct. The following are the weights of some that have come under my notice:—

(1) Milton, Pewsy, Wilts ... ... 7¾ oz.
(2) Witheridge, N. Devon ... ... 7½ „
(3) Morley, Devon ... ... 7½ „
(4) Dartmoor ... ... 7½ „
(5) Three near Yarmouth ... ... 7, 7½, 7½ „
(6) Three, Aldeburgh, Suffolk ... ... 7, 7¾, 8 „
(7) Thorpe, Northants ... ... 7¾ „
(8) Melton Mowbray, Leicester ... ... 8 „
(9) Stickney, Lincolnshire ... ... 10 „
(10) Two, Holland ... ... 8, 8½ „
(11) Eaglesham, Renfrewshire ... ... 10 „
(12) Pickering, Yorkshire ... ... 10¼ „

The heaviest known to the author of the 'Fauna of Norfolk' (Rev. R. Lubbock) weighed 10 oz., as noted by Stevenson in the work above quoted. In addition to those above mentioned, I have seen many stuffed specimens in different parts of the country, the weights of which had not been ascertained by the respective owners.—J. E. Harting.

Quail in the Isle of Wight.—I do not know if Quails have been often met with in the island at this season of the year, but I think it is always worth while chronicling their presence. I flushed one by Hurricane House, above Shanklin, on Oct. 2nd. The bird was close to the footpath, and flew only about twenty yards, so I put it up again, just to make sure, as it was getting dusk.—H. Marmaduke Langdale (Royal Cliff, Sandown).

[It appears from the information contributed by the late Mr. A. G. More to Venables' 'Guide to the Isle of Wight' (p. 431), that the Quail is occasionally obtained there in late autumn and winter. A single instance only is known of its having nested in the island.—Ed.]

Abnormal Nesting of the Goldcrest in Ireland.—The Golden-crested Wren (*Regulus cristatus*), strange to say, in this part of the country builds commonly against the sides of ivy-covered trees. The nest is not suspended under a branch of fir, as I have found it in England, and the nests here are badly and loosely put together.—A. T. Mitchell (Drogheda, Co. Louth).

BATRACHIA.

Food of Toad.—A nephew of mine at Emsworth, near Portsmouth, writes me that he lately saw a Toad swallow a mouse. He watched the mouse, which was not quite full-grown, for some little time running about in a dazed condition, about a yard from the Toad, when suddenly, to his surprise, it appeared to be drawn into its mouth. The hind legs and tail of the mouse were visible for some little time after the rest of the body had disappeared, the tail continuing to twitch for fully three minutes after the legs had been absorbed. I send you these particulars, as I never previously heard of a Toad attacking an animal of that size, and am curious to know whether the occurrence is unusual.—R. H. Ramsbotham (Monkmoor, Shrewsbury).

[The observations of naturalists in regard to the food of the Common Toad, *Bufo vulgaris*, show that it is in a great measure insectivorous, living chiefly upon flies, spiders, and beetles, but habitually taking earthworms also, which are generally seized by the middle and gradually stuffed into the mouth by the aid of the fore feet. This much we have ourselves observed, but it is new to us to learn that a Toad will not only attempt to seize and swallow a mouse, but will succeed in doing so. The mouse, we imagine, must have been a small one, and under the influence of a fascination which to some extent paralysed its movements, in the same way that a rabbit is affected when pursued by a Stoat. We should not have supposed it possible for a Toad to hold so large a prey, nor to digest it if swallowed; but a friend who has kept Toads alive for the purpose of observing their actions, assures us that he has fed large ones with young mice. We can therefore no longer doubt.—Ed.]

CRUSTACEA.

Weight of Lobsters.—In August last three Lobsters were taken in Herring-nets in Loch Seaforth, and brought to Stornoway, which weighed respectively 7 lbs. 5 oz., 8 lbs. 9 oz., and 9 lbs. 8 oz. The largest was minus a claw, which made a difference in its weight of perhaps 2 lbs. All

three were remarkably tender, and good eating.—H. Holmes (Aline Lodge, Stornoway, N.B.)

MOLLUSCA.

Hibernation of Limax flavus.—The little yellowish coloured Slug known to conchologists as *Limax flavus* is in the habit of hibernating in small colonies. I am told by a gardening friend that he found no less than twenty-four of them congregated together in a hole in a clod of earth. This is a most unusual number, so far as my experience goes.—Robert Service (Maxwelltown, Dumfries).

INSECTS.

Insect Migration.—I have read with much interest the paper on migrating butterflies and dragonflies. There are several points in it which appear of great interest; thus some of the authorities quoted by you mention having seen swarms of butterflies sipping at damp places, and on this point I can certainly confirm them. In a dark African forest-path, and also in Madagascar woods, one of the most familiar sights is a great assemblage of bright blue and white butterflies, taking long, deep draughts of moisture from the unpleasant looking mud in a hollow of the road. Still, this is just what one would expect, for I found that, at any rate in the drier hours of the day, the best place for butterfly-hunting is always in the vicinity of a stream, which is only natural, for every creature is thirsty in Africa at such a time. With regard to their actual migration in large flocks, I have never seen such a phenomenon myself; all that I can say on the subject is that the sight of butterflies flying past by twos and threes is common when one is on a steamer near the shore. I am surprised at such an explanation as that given for these migrations, because I have always understood that the life of a butterfly is a short one, and how these insects should have time to migrate seems to me curious. You will, of course, know that there are certain species of *Argynnis* confined to the mountain-tops (above 10,000 ft.) of Kilimanjaro, Kenia, Ruwenzori, and possibly Milanje. I think that their occurrence and distribution would be worth your investigation, for these forms occur *only* on these isolated and distant summits, and not, if I am rightly informed, in the lower country between the hills. This would imply that they were capable of flying 600 miles, but, of course, the chance of any particular flight reaching a mountain at that distance is rather small. (The proportion of chances, I think, would be 360 to one.) If I understand your theory rightly, these migrations resemble the manner in which the over-populated countries of Asia sent forth irregular swarms of Goths, Huns, and others; and without some such explanation it is difficult to understand the distribution of butterflies in islands, and on such isolated

mountain summits as those mentioned above, which are really climatic islands. Dragonflies have a nearly regular patrol system along favourable stretches of path or the shore of a pond, &c. Any one can verify by observation that each has his own little district, and vigorously objects to any one poaching on his preserves; at least, I certainly believe this: hence it is, perhaps, more surprising that they should have a migration of the same kind.—G. F. Scott Elliot (Newton, Dumfries).

Insect Migration.—With reference to the article "Migration of Butterflies," by the Editor, in the current number of 'The Zoologist' (p. 335), I have for many years been aware of the fact that there is, at irregular intervals, a very considerable immigration of insects across the North Sea to the east coast of England. These are chiefly butterflies, moths, and dragonflies, the latter *Libellula quadripunctata*. The great movement of *Plusia gamma* recorded by Herr Gätke in 1882, in August, across Heligoland, coincides with the appearance of immense numbers of the same insect on the coast districts of Lincolnshire and Yorkshire; this immigration was recorded by me in 'The Field' of Sept. 16th of that year. Few naturalists are aware with what apparent ease butterflies and moths cross an immense extent of water. I have seen from the cliffs of Heligoland the common Cabbage Butterfly drifting in from the east, some to alight, but the majority passing north and south of the island, and going west like so many flakes of snow. When in the middle of the North Sea I have also seen them pursuing the same course, and crossing close before the bows of the vessel without attempting to alight. During the autumn of 1894, about twenty-four examples of that lovely insect, *Sphinx convolvuli*, were taken in the Spurn district, and many more seen; these were probably immigrants. Many years since I recollect considerable numbers were washed up dead between Kilnsea and the Spurn. The amazing numbers of *Vanessa urticæ* which have appeared during the present autumn, especially in east-coast districts, may perhaps be accounted for by a great migration across the North Sea; but of this further proof is needed. I have seen them this year, in September, by hundreds, over the flowers in small gardens in a town near the coast, where in former years single examples would scarcely have appeared.—John Cordeaux (Great Cotes, Lincolnshire).

Insect Migration.—For some years past I have carried on a series of observations at and near the Spurn Point on the Holderness coast, which leaves no doubt in my mind, and that of other observers with me, that there are erratic immigrations of some insects, at irregular intervals, from time to time. This opinion has been more than ever strongly forced upon me this month and last (Aug. and Sept.) by the sudden appearance on the Holderness coast of several insects in such numbers as almost to preclude

the probability of their being bred in the immediate neighbourhood. I refer more particularly to the Convolvulus Hawk-moth (*Sphinx convolvuli*), which visited all the honeysuckle then in flower upon various porches and summerhouses in the neighbourhood, and these flowers evidently were the only ones which they visited. They came with some regularity at dusk; this was, I think, what may be called their first flight. They would suddenly appear as winged phantoms, dart to the flower, poise on vibrating wings, their long proboscis thrust into the tube of the flower as they drank its nectar. During the succeeding three weeks from the time when they were first observed very many were seen, and I find from my notes that two dozen fell victims to the net. The point of interest is, Are these insects bred in the district in which they are taken, or are they immigrants? The food-plant is common in the neighbourhood, but, though carefully sought for year after year, neither the larvæ nor the pupæ have ever been taken. To the question whether the moth ever migrates or not, I think I may reply in the affirmative. Some years ago Mr. Philip Loten, of Easington, recorded the fact that one autumn many of these moths were picked up dead on the high-water mark between the Spurn and Easington; numbers were seen in this way and noted. There can be no doubt that these were immigrants which had dropped into the sea on failing to cross it. This year has been everywhere notable for the Admiral Butterfly, but the numbers on the Spurn Point were remarkable, and must, I feel sure, have been added to by migratory flights of considerable dimensions. I have myself seen butterflies crossing the North Sea, during a voyage from Sweden to Hull some few years ago, when passing over the Dogger Bank. The species then noticed was the Red Admiral in some numbers, where they would be probably about 300 miles from the nearest land and were heading west. Many small birds were passing the steamer at the same time, and in some instances were trying to catch the insects *en route*. It seems to me that there can be no doubt that if small Noctuæ like *Plusia gamma*, and butterflies can cross the North Sea, the powerful-flying *Sphinx* moths have (in fine weather) no difficulty in crossing the ocean in a few hours' time.—H. Bendelack Hewetson (11, Hanover Square, Leeds).

Insect Migration.—With reference to your interesting article on the migration of butterflies, I append extracts from my note-book in Ceylon. The butterfly is that figured by you on page 337, *Catophaga galena*, and very similar to our common Cabbage Butterfly:—In the month of November, at Colombo, a strong north wind blows daily along the sea-coast, at which season clouds of white butterflies appear flying in a continual stream, extending far inland for days and weeks. They are all flying *from the south* and in the eye of the wind, and the stronger the wind blows the more rapid is their flight. I never witnessed this fact without the greatest

astonishment. The Locust, with its strong body and powerful wings, cannot make head against the wind, but drifts with it; yet that a butterfly with a body so slight as scarcely to gain a fulcrum for the wings to bear on, and with wings offering so broad a surface to the breeze that one would expect to see it drift like a snowflake, should possess the faculty of propulsion against a strong wind, gives us a clue to an aerostatic principle with which we are not yet acquainted. It is to be noticed that the action of the wings of these butterflies is not horizontal, like the Admiral or the Tortoiseshell, nor is their flight even and continuous, but they are propelled in jerks, with the wings vertically closed and opened alternately, so as to offer the sharpest edge to the resistance of the wind. Thus the butterfly does not appear to propel itself, but to be driven forward by the action of the wind eddying round against the under surface of the wing presented to it; but how this is done it is not easy to demonstrate. As there is no land south of Ceylon, it seems evident that these butterflies deposit their eggs in the southern forests of this island, previous to their starting on their migration; otherwise the annual flights could not be kept up. I notice, however, that Mr. Mann gives the months of March and April as the season of migration witnessed by him; but while he gives the direction of their flight from N.E. to S.W., he does not state the direction of the wind. The S.W. monsoon usually commences in April, while the N.E. monsoon commences in October. I assume that these are the same flights returning after a circuit of the island, and flying against the southerly wind in the same manner as those seen by me in November were flying against the north wind. I cannot identify Navanghena, the place from whence Mr. Mann writes, and therefore do not speak confidently.—E. L. Mitford (Pikdan House, Morpeth).

Insect Migration.—The Clouded Yellow Butterfly (*Colias edusa*) is one of the most interesting of British species, from its habit of appearing in the more northern parts of Britain at irregular intervals—a peculiarity which it shares in common with various other Lepidoptera. No satisfactory reason for this erratic behaviour has yet been advanced, nor knowledge gained of how or in what stage of its existence the insect passes the time between each appearance. In Scotland the first recorded capture of *C. edusa* was made in Arran in 1848, by Mr., afterwards Professor Sir, Wyville Thomson. Four years later one was captured near Largs, in Ayrshire, on Sept. 12th, by the late Mr. Birchall. The next, or third, Scottish specimen was secured at Kirkmahoe on Aug. 17th, 1857, by Mr. W. G. Gibson; and in the same year a few more were taken about Glencaple and neighbourhood. In 1859 some were seen near Newbie, and in 1862 Mr. Lennon and other local collectors took it in large numbers in this district. From 1862 till 1877 no one appears to have seen this butterfly on this side of the Border, but in the latter year it suddenly burst

forth in legions almost everywhere, but more especially in the south-western counties, and it was also taken so far north as the Orkney Islands. Since then, I do not think it was noticed in any part of Scotland until the autumn of 1889, when I heard of one having been taken at Dargavel, and others in Wigtownshire. Between that time and the present a few have been met with at irregular intervals, *e.g.* ten in 1892; but so far as I am aware there has been no remarkable invasion of them until the present year.—Robert Service (Maxwelltown, Dumfries).

NOTICES OF NEW BOOKS.

Icebound on Kolguev: a Chapter in the Exploration of Arctic Europe; to which is added a Record of the Natural History of the Island. By Aubyn Trevor Battye. Large demy 8vo. With illustrations. London: Constable & Co. 1895.

The main facts concerning Mr. Trevor Battye's adventurous expedition to Kolguev Island are probably by this time well known to most of our readers. The interesting narrative which he has now published supplies us with the details, and gives us an account of what befell him during an enforced residence on the island, from June 16th to Sept. 13th, 1894. The ostensible object of his visit was to learn something of the birds which breed there or visit the place in their wanderings, and of the characteristic plants which grow there. Although not the first naturalist to explore this out-of-the-way island, he is the first Englishman who has braved the hardships of living there for a few months, and the results of his experience, as detailed in his book, have a novelty and an originality which render them particularly attractive.

The accident which detained him on the island three months instead of one, gave him an excellent opportunity of learning something of the Samoyedes, its only inhabitants. For some weeks he lived the life of these people, visited them in their *chooms* or huts, drove in their Reindeer sledges, and accompanied them on their wildfowling excursions. It was a pleasant experience, if somewhat a rough one; but he made a good use of his time, carefully noting the names of such birds as he identified, collecting specimens of a few, and gathering such plants as

appeared to him remarkable, for further examination and identification on his return. His observations on these, as given in appendices to his volume, include information of much interest. He was lucky enough to find eggs, both of the Grey Plover (*Squatarola helvetica*), and the Little Stint (*Tringa minuta*). Two specimens of the Curlew Sandpiper (*Tringa subarquata*) were found, but the hoped-for discovery of a nest of this species baffled all his endeavours; nor did any nest of the Knot (*Tringa canutus*) reward an unwearied search for it.

Perhaps the most curious portion of his narrative is that in which he describes the Samoyede method of catching Brent Geese, which constitute the chief winter provision of these wandering people. The birds are captured at a time when the majority of them are moulting their quill feathers, and are consequently unable to fly. They are then driven into nets, and the enormous number captured by this means seems almost incredible. Mr. Trevor Battye thus describes the *modus operandi*:—

"A low-lying stretch of land, half peat, half grass and marsh, and an island on the tidal flats, some four acres in extent. Round this, now that the tide was out, sand or shallow water, which deepened to a wide creek against the island's southern bank. Beyond this again sand or mud in ridges, and creek after creek. Further yet, perhaps three miles to seaward, the long line of the outer sandbank with its piled-up ice—and then the sea.

So bad was the day that only now and then as the mist lifted could you see the farthest ridges and the higher banks of mud. But when the banks appeared, they were crested with a *chevaux de frise*, which we knew were serried lines of geese. Seven boats under the command of the younger men were soon slipping down the creeks; for they were to get behind the geese. Then the reindeer teams were driven out, three on one side and four on the other, remaining as near as possible equidistant, to prevent escape by the flanks. All were now away except Uano, his wife Katrina, two or three small girls, the little boy Wanka, and myself. Katrina nursed her baby.

Before half an hour was gone by the geese began to rise. We could see them through the rain getting up in hundreds off the sands. Away behind us on the island was the trap. I must describe this particularly. At the water's edge, thirty yards apart, two poles were fixed, to which a net was fastened. The net was then carried inland, the two walls converging, until, at a point some forty yards from the entrance, they were not more than five yards apart. From this point they bellied out, and

formed a circular *cul de sac*. The netting was about four feet in height, of some three-inch mesh, and round the *cul de sac* was double. The uprights which carried it were strengthened by spurs.

Long before we could see the boats, for the mist had thickened, we could hear shouting and the cries of the geese. But after a bit first one and then another boat came into view. On the men came, but very slowly; now pulling across a creek, now pushing the 'arnoh' over a bit of mud or hauling it over a sand-ridge, sometimes leaving it altogether and running off to head the geese. So slowly they came zig-zagging along.

By this time we could see geese by thousands through the mist. I could even distinguish the short trumpet-note of the Brent among the general babel. It was indeed a babel. How to convey to you any idea of it I do not know. If you can imagine many hundred farmyard geese, and many thousand cornets all sounding together and crowded on by a handful of screaming wild men—if you can imagine this, then you are not far off the mark.

Nearer they came and nearer, the middle a dense solid mass of geese, the sides a constant stream of parties, large or small, running away like lamplighters for all that the sleighs might do to stop them. The very earth seemed geese, and for that matter the sky too. For there never was an interval when geese were not rising, and instead of going right away at once, as one would have looked for geese to do, they hung about the spot, circling round and rising higher and higher till they lost themselves in the mist. I could never have believed it possible that so many geese could be had on one small island.

Exactly at nine o'clock—five hours from the beginning—the advance guard of the swimming geese came round the corner of the creek. It was one solid phalanx of Brent. They seemed to be by far the fastest swimmers. For behind them at a considerable distance followed a smaller lot of Grey Geese, some swimming, some running along the edge.

Then with one accord nearly all these Grey Geese rose—five hundred perhaps there were. For some little while the geese delayed as though they felt they were getting too much inland, or suspected a trap in front. Then the boats came up from behind, and the geese crowded on. They didn't like going. Sometimes the leading geese would stop and wheel about, heading right into the mass. But the boats came on. Every moment I looked to see the Brent escape by diving, or expected some to rise, for it was plain enough that many were full-winged. Neither of these things they did; only like a pack of idiots they 'wanked' and swam along.

And now the body of Brent was exactly opposite the entrance to the nets, and about them in a half-circle were the boats. Round and round they swam, but refused to leave the water. The boats did not dare close in for fear the geese should break. It was a ticklish moment—the geese

would not make the land. At last a single old goose—a Bean Goose he was—stepped out and ran up the bank. He was quickly followed by one or two more, and then by the first of the Brent. And now that they had started, they went quickly enough, scrambling after one another and heading into the net. Over the green they ran like a flock of domestic geese. Sometimes they aimed for right or left, but then the children showed themselves and the geese were turned.

The last bird was in, and then we closed the rear. Not a Brent had flown, not a Brent had dived, not one escaped. Of all that army every bird was in the net—a dense, black, moving mass."

Their escape being barred, the men proceeded to kill them by breaking their necks, and they were then stored for provisions in the following singular manner:—

"The turf cut round with the axe, where the cloudberry grew thickest, was torn up with the hands; then the geese were stood on their tails with the heads tucked in, till the girls had made a circular group some three or four yards across. Then the turfs were rolled back on them a double layer, and the packing was complete."

Our extract of this curious description is so lengthy, that we have little space in which to refer to Mr. Trevor Battye's personal adventures: how he landed on the island with his companion, Mr. Thomas Hyland, a bird-stuffer from the steam-yacht 'Saxon,' chartered by Mr. Powys; how, in consequence of ice floating in, the ship was unable to take him off at the time arranged: how his sojourn there was consequently delayed for three months, so that his friends in England imagined he must have perished; how at last he was rescued by a Russian trader and safely landed near the Petchora Delta, whence, by an overland route, he eventually returned safe to England.

These episodes are all graphically detailed in a fresh and lively style, and the reader is left in doubt which to admire most, the author's pluck under very trying circumstances, or his enthusiasm in making natural history collections under such very adverse conditions.

His narrative has been very appropriately illustrated by Mr. Nettleship and Mr. Charles Whymper, from photographs and rough sketches supplied to them, and the result is one of the most attractive books of travel by a naturalist that we have met with for some time.

The Fauna of British India, including Ceylon and Burma. Birds. Vol. III. By W. T. Blanford, F.R.S. 8vo, pp. i—xiv, 1—450. London: Taylor & Francis. 1895.

The progress of this excellent undertaking, under the editorship of Dr. Blanford, must, from its very nature, be necessarily slow, in consequence of the enormous amount of material available, and the extent of the collections to be worked out. We have from time to time advised our readers of the appearance of different volumes in the series prepared by different specialists;* and we have now to direct attention to the third volume on the 'Birds' of India, which has just made its appearance. The first two volumes of this section were prepared by Mr. Eugene Oates, who would have completed his task had he not been obliged to return to his appointment in India, as explained in the Preface to his second volume. The work of completion, therefore, has been now undertaken by the Editor, who announces that although the original design was to finish the 'Birds' in three volumes, it has been decided that a fourth will be necessary, and of this he states that a considerable portion is already written.

The species of which descriptions appear in the present volume are the Picarian or non-Passerine perching birds, the Parrots, and the nocturnal and diurnal Birds of Prey. Thus the first *three* volumes of this work correspond to the first *two* of Jerdon's, and contain the same families of birds, although differently arranged.

As to classification, "the system adopted is in the main identical with those of Sharpe and Gadow, and differs in no important point from the classification of Sclater and Newton." The chief difference between the plan here followed and those proposed by the ornithologists named is that no attempt has been made in the present work to arrange in larger categories the groups here termed Orders. This is due to the circumstance that there is a much wider general agreement as to the distinctness of the smaller ordinal or subordinal groups than as to their relations to each other. Although the synonymy seems well worked out, we regret to see here and there, as regards nomenclature, a want of conformity with the views of the above-named

* See 'Zoologist,' 1888, p. 395 (Mammals); 1889, p. 467 (Fishes); 1890, p. 150 (Birds).

contemporary ornithologists. We cannot presume to say who is right, we only regret the fact that in many instances they are unable to agree as to the precise generic and specific names a particular bird should bear. To take the case of a common and widely distributed species, the Kestrel, which in the 4th edition of Yarrell's 'British Birds' (i. 78) appears as *Falco tinnunculus*, is *Cerchneis tinnunculus* of Sharpe, and *Tinnunculus alaudarius* of Blanford. To take another instance. Jerdon places the Merlin in the same genus with the Hobby, and names it *Hypotriorchis æsalon*. Prof. Newton, regarding it as a typical falcon, calls it *Falco æsalon*. According to Dr. Sharpe it should be *Falco regulus*, Pallas, while Dr. Blanford, adopting the genus *Æsalon* of Kaup (1829), styles it *Æsalon regulus!* Alas! uniformity in nomenclature seems to be as far off as ever, and, we suspect, is not likely to be attained until an international congress of ornithologists appoints a committee to prepare for publication an authoritative 'Index generum et specierum.'

This state of things makes it troublesome for a tyro to find a particular species in Dr. Blanford's 'Index' to this volume, which does not include the English names. There is many a man in India, a good sportsman perhaps, and would-be naturalist, wishful, it may be, to do what he can in the cause of ornithology by collecting specimens, yet knowing nothing of scientific nomenclature. Anxious to identify some bird he has shot, he has no idea under what name to search for it in the Index. Hence it seems to us that the absence of the vernacular names detracts in one respect from the practical utility of the work.

The illustrations (chiefly figures of head and foot only) are excellent, but might well be more numerous.

The New Forest: its Traditions, Inhabitants, and Customs. By Rose de Crespigny and Horace Hutchinson. Post 8vo, pp. i–viii, 1–295. With Illustrations and Map. London: John Murray. 1895.

This is a gossipy and very readable little book, in large type, well spaced out, and appropriately illustrated. It is not exactly a guide to the New Forest district, for no routes are indicated, nor information given as to what particular places are especially worth a visit from the tourist; but it conveys in a

pleasantly written style much that will interest intending visitors, be they naturalists, archæologists, or collectors of folk-lore. Those who already possess Wise's 'History of the New Forest,' which has gone through several editions, are not likely to find in the present volume much that will be new to them; and this is especially the case with the chapters which treat of the beasts, birds, insects, and plants to be met with in the Forest area, although here and there we find some remarks which bring the history of a particular species down to a later date than that referred to by Mr. Wise.

On the subject of deer a great deal more might have been written, and under this heading the author might have consulted with advantage what has been published by the Hon. Gerald Lascelles, the deputy surveyor of the Forest. Reference is made, under the head of "Game-preserving," to a gamekeeper named Toomer (p. 260), and we wonder that it did not occur to the authors to mention the curious case of a black pig, which was trained by a forest-keeper of that name to find game like a pointer. Daniel, who has published all the particulars in his 'Rural Sports' (vol. iii. p. 62), gives a portrait of this remarkable animal, which he says was broken by Richard Toomer to find game, and to back and stand, and was as staunch as any pointer. She daily improved, and in a few weeks would *retrieve* birds that had run. She stood partridges, black-game, pheasants, snipes, and rabbits in the same day, but was never known to point a hare. She sometimes stood a Jack Snipe when all the pointers had passed it by, and she would *back* the dogs when they pointed, although they refused to back her until spoken to.

Writing of the Badger, the authors of 'The New Forest' remark that "in a country that is not very closely preserved, and where such large tracts are covert, it is hard to form any judgment of an animal whose habits are so entirely nocturnal"; and they add that "no one seems to molest them." From this we infer that the authors never read 'The Field,' or they would know something of a Hampshire gentleman who hunts the Badger regularly in the Forest, and keeps a special breed of dogs for the purpose.

"The martron, or marten cat," we are told (p. 153), "has become extinct. For the rest there is abundance of stoats, weasels, snakes, field-mice, and all manner of vermin, such as

would naturally thrive in a closely wooded country where inhabitants are scarce and each keeper has a wide beat." The Polecat is not mentioned, from which we are to infer that it is at the present day as extinct as the Marten. The same may be said of the Kite, the Honey Buzzard, Common Buzzard, Marsh and Hen Harriers; but the authors, apparently, are unaware of the fact that Montagu's Harrier is not only an annual visitor to a certain part of the Forest, but is known to have nested there several times of late years. "Ten years ago," it is said (p. 258), "Lapwings were numerous on Brook Common. Now they are rarely there, though they still haunt the wilder plains."

Herons are numerous, and form a feature that is in harmonious keeping with the wilder landscapes of the Forest. The following passage, relating to this bird, will convey a good idea of the writers' style and power of observation :—

"Lately it happened to one of the present writers to be pointing out to a visitor the beauties of the view from the foot of Raik's Brake—an expanse of wild scrub, of heather and bracken, and of snipe-marsh yellow with the moss-patches and pale glints from the standing water here and there. Down the middle of the picture a stream came winding, and ever broadening as it came, from the tiny rivulet scarcely seen among the heather and bracken on the top of the long hill on the right. On the left a clump of firs threw a dark shadow across the stream, and the scene melted away in undulating distances to the blue hills of Dorsetshire. As we looked on this scene, which was absolutely without life or motion, a heron came heavily flapping over our heads and settled, on long legs, in the middle of the marsh. It was the completing touch that made the picture perfect, and a touch that is often present to complete the wilder landscapes in the Forest."

The Pheasant. Natural History, by the Rev. H. A. Macpherson; Shooting, by A. J. Stuart Wortley; Cookery, by Alexander Innes Shand. 8vo, pp. 265. With illustrations. London: Longmans, Green & Co. 1895.

Messrs. Longman's 'Fur and Feather Series,' of which two volumes have been already favourably noticed in this journal ('The Partridge,' Zool. 1894, p. 199, and 'The Grouse,' *tom. cit.*, p. 358), commends itself alike to naturalists and sportsmen, not only on account of the accurate information which is given in the different sections by authors who are well qualified to write

on the subjects which they have undertaken to deal with, but also on account of the excellent illustrations by Mr. A. Thorburn, which are so true to nature that they might well be mistaken for instantaneous photographs, instead of reproductions as they are of sketches in black and white.

Writing of the distribution of the Pheasant in Europe, Mr. Macpherson very properly points out (p. 6) the mistake which many writers have made in supposing that *Phasianus colchicus*, except where introduced by man's agency, is confined to the forests and marshes which fringe the shallow and slimy waters of the slow-flowing river Phasis. It exists in many parts of the Caucasus, extending eastward into Transcaucasia, and in a northerly direction to the Volga. In the twenty-second volume of the 'Catalogue of Birds in the British Museum' (p. 322), Mr. Ogilvie Grant has defined the range of this bird as embracing Southern Turkey, Greece, and the north of Asia Minor, as well as in the Caucasus; so that although it may be true enough that the Romans first became acquainted with it through specimens imported from Colchis, from what we now know of its geographical distribution, there is no reason why they might not have procured it from countries much nearer to Italy, had more particular search been made for it. Professor Giglioli considers that the Pheasant is as much indigenous to Europe as to the swamps of the Caucasus; *à propos* of which he states ('Avifauna Italica,' vol. i. p. 336) that it is to be found abundantly upon the frontier of Dalmatia, and also frequents the woods at the mouth of the river Drino in Albania, to which it certainly cannot have been introduced by human agency.

Referring to the introduction of the Pheasant into Ireland, Mr. Macpherson quotes Thompson to the effect that it must have been introduced into that country prior to the year 1589, when Robert Payne wrote that there was "great store" of these birds there. He might have added that Giraldus Cambrensis found no Pheasants nor Partridges in Ireland in 1183–86, nor were any noticed there nearly two centuries later, in 1363, by Ranulf Higden (*cf.* Zool. 1881, pp. 437–439).

As to the introduction of this bird into St. Helena, alluded to by Mr. Macpherson (p. 20), some fuller details than he has given may be found in an article on this subject published in 'The Zoologist' for 1886, p. 225.

Of late years we have heard something of the migratory movements of Grouse and Partridges (Zool. 1886, p. 107; 1893, p. 433; 1894, p. 18; and 1895, pp. 21, 69, 108). Mr. Macpherson tells us that in some districts the Pheasant also moves from a summer to a winter home. In the district of Zakatal [Zakhatali, Southern Russia], in the summer, Pheasants often migrate to higher ground at the foot of the mountains; but after the crops are gathered in, and on the approach of the first cold weather of the autumn, they again return to the low-lying valleys of the river Alazani, where they pass the winter in the reeds, long weeds, and bushes.

As to the food of wild Pheasants in this country, Mr. Macpherson says it consists chiefly of the tender shoots of plants, grass, bulbous roots, worms, and insects. The crop of one bird which he examined was full of the roots of the common buttercup. In addition they pick off the oak spangles, and eat such hard food as hazel nuts, of which no less than twenty-eight were taken from the crop of one bird, and ninety-three acorns from another. When hard pinched they feed on the polypody fern. Nothing is said about their occasionally feeding on yew, and of the mortality which consequently ensues; nor do we find any remarks upon lead-poisoning, resulting from their sometimes picking up shot-pellets in mistake for grain; the poisoning of Pheasants from both these causes has been reported from time to time in the columns of 'The Field.'

From the sportsman's point of view, of course the most interesting portion of this volume will be that in which Mr. Stuart Wortley discourses on the breeding and rearing of Pheasants, the management of coverts, and the best way of effecting a good show of birds when the time arrives for shooting them. His advice, founded on experience, carries conviction with it, and is not only well expressed, but thoroughly practical. This is what young sportsmen stand most in need of—good sound advice from one who is competent to give it. Indeed, we may go a step further, and say that not a few middle-aged sportsmen will gladly admit, on perusing this volume, that they have gleaned from it some very useful hints.

The closing chapter, by Mr. Shand, which deals with the cookery of the Pheasant, is sensibly and brightly written, and anecdotical withal. The monotonous commonplace of a recipe-

book is thus avoided, and Mr. Shand alternately amuses and instructs the reader until he leaves him with the following quotation from a letter of Sydney Smith to Canon Barham:—"Many thanks, my dear sir, for your kind present of game. If there is a pure and elevated pleasure in this world it is that of roast pheasant and bread sauce; barn-door fowls for dissenters, but for real churchman, the thirty-nine-times-articled clerk, the pheasant! the pheasant!"

A Preliminary List of the Hemiptera of Colorado. By C. P. Gillette and Carl F. Baker. 8vo, pp. 137. Fort Collins, Colorado. 1895.

The amount of good entomological work which is being done in America is simply astonishing. While entomologists in this country are still trifling with popular books on Lepidoptera and Coleoptera, the Americans are energetically working out the insect fauna of their continent, and not only in the more showy orders of insects. We have here a catalogue of the insects belonging to one of the least-studied orders, and a catalogue of the productions of one of the most distant States, including hundreds of species, with the most elaborate information respecting localities, elevations, &c. Many species are here described as new by the best specialists in America, and the descriptions are frequently illustrated by magnified details. One oversight, however, may be noted: the catalogue gives no names but those of species and genera, proceeding in one list without any indication of the suborders Heteroptera and Homoptera by different headings.

It is quite time for British entomologists to bestir themselves, and to see that the productions of British colonies are worked out in the various orders other than those which are the most popular, although there is much to be done even as regards the latter. With respect to England itself, there are whole families of insects, comprising hundreds, if not thousands, of species, at which only one or two entomologists are at present working; while there are others concerning which very little native information is published, and that antiquated and unreliable.